PROPOSED

COVERED SOURCE PERMIT RENEWAL - PERMIT 0105e-01-C
Application No. 0105-07

Facility: Navy Region Hawaii – Public Works Center, Pearl Harbor
Located within the Pearl Harbor Naval Complex (PHNC)
Pearl Harbor, Oahu

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SICC: 4931 - Electric and Other Services

Background:
Public Works Center, Pearl Harbor (PWC) primary responsibility is to provide auxiliary and emergency power, operate and maintain the power generating equipment, and maintain the fuel supplies of the Pearl Harbor Naval Complex (PHNC). The power generating equipment include emergency generators, portable boilers, and combustion turbines. PWC also maintains the facility grounds of the PHNC. Grounds maintenance includes activities such as road repair, buildings maintenance, and landscaping.

The PWC removed from service three 9.5 MMBtu/hr boilers. The demand for steam within the PHNC has steadily decreased to a point where operating the boilers was no longer feasible. Current and future steam demands will be met by the two 12.6 MMBtu/hr portable boilers.

Numerous small storage tanks and containers used for storing petroleum products (e.g., fuels, oils, grease, etc.) are also maintained for many of the PWC Pearl Harbor in the PHNC emergency/standby equipment.

The Industrial Waste Treatment Complex (IWTC) was designed to receive, store, and treat wastes generated by various governmental activities. Some of the different wastes to be treated at the IWTC include the following:

1) corrosive liquids from ship maintenance operations;
2) spill cleanup wastes;

3) antifreeze;
4) chemical laboratory testing wastes;
5) unusable laboratory chemicals;
6) various exempted industrial wastewaters; and
7) aqueous film forming foam (AFFF) wastewaters from firefighting training.

The off-site wastes will be transported to the IWTC in DOT approved containers or by tank trucks. The off-site waste will be inspected and tested before acceptance to determine if can be treated. If determined to be treatable, the waste will be placed either into containers awaiting treatment or in a wastewater treatment unit (open top storage tanks). Several storage tanks, numbers T-5 and T-6, will be exempted from the standards of Subpart DD per 40 CFR §63.683c.2. The exemption requires the total annual quantity of HAPs stored not to exceed 1.1 tons (1 metric ton). The balance of the storage tanks, numbers T-7 and T-8, will be subject to a portion of the standards of Subpart DD because the applicant elected to maintain an average volatile organic hazardous air pollutant (VOHAP) concentration level at less than 500 parts per million by weight (ppmw).

The operation of the IWTC for off-site wastes will be as follows:

1) Determine the VOHAP concentration of the off-site material received.

2) If the VOHAP concentration is less than 500 ppmw, then it is placed into one of the treatment units, tank numbers T-7 and T-8. If the VOHAP is greater than 500 ppmw, the off-site material stream is placed into an exempt tank, numbers T-5 and T-6, and the quantity of HAPs are recorded and deducted from the annual limit of 1.1 tons per year.

3) Once the waste is treated and the effluent meets the Navy pre-treatment standards, the water will be discharged into the Pearl Harbor sewer system for further treatment at the Fort Kamehameha Wastewater Treatment Plant.

The Treatment, Storage, and Disposal Facility (TSDF), also known as the Conforming Storage Facility (CSF), stores waste. The TSDF is the main hazardous waste storage facility for all military wastes in Hawaii. The only operation at the TSDF that may result in air emissions is the periodic opening of containers to draw samples for testing and demonstrating compliance with RCRA regulations. The TSDF does not have any storage tanks or other equipment and only houses Level 1 containers. The TSDF is subject to 40 CFR 63 Subpart PP - Standards for Containers. Although the emissions from the IWTC are almost insignificant, 0.2 tons per year, the Pearl Harbor Naval Complex is a major source for HAPs and thus, the IWTC is subject to NESHAP requirements, 40 CFR 63 Subpart DD and is permitted under CSP no. 0105-02-C.

This renewal will combine CSP Nos. 0105-02 and 0105e-01-C into one permit, CSP No. 0105e-01-C.

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Equipment:

a. 12.6 MMBtu/hr, Portable Hurst Boiler, model no. 53-P2-300-275, serial no. S1500-275-1;

b. 12.6 MMBtu/hr, Portable Superior Boiler Works Boiler, model no. MS6-5-1500, serial no. 9720;

c. 2 MW Allison Combustion Turbine, model no. 501-K14C, serial no. 51-17906, located at building B149;

d. 2 MW Allison Combustion Turbine, model no. 501-K14C, serial no. 51-17908, located at building B149;

e. 2 MW Allison Combustion Turbine, model no. 501-K14C, serial no. 51-17895, located at building B177;

f. 2 MW Allison Combustion Turbine, model no. 501-K14C, serial no. 51-17893, located at building B177;

g. 2 MW Allison Combustion Turbine, model no. 501-K14C, serial no. 51-17891, located at building K10;

h. Four (4) each 5,000 gallon Off-site Material Management Tanks - tank numbers T-5, T-6, T-7, and T-8 at the Industrial Waste Treatment Complex (IWTC);

i. One 10,000 gallon Oily Wastewater Storage Tank, BELCO Manufacturing Co., tank no. T-4;

j. One 4,000 gallon Oily Wastewater Treatment Tank, BELCO Manufacturing Co., tank no. T-9; and

k. One Oily Wastewater Separator, Crall Products, Inc.

Air Pollution Controls:

None of the equipment has any air pollution controls.

Applicable Requirements:

Hawaii Administrative Rules (HAR):

Chapter 11-59, Ambient Air Quality Standards

Chapter 11-60.1 Air Pollution Control

- Subchapter 1, General Requirements
- Subchapter 2, General Prohibitions
  - 11-60.1-31 Applicability
  - 11-60.1-32 Visible Emissions
  - 11-60.1-38 Sulfur Oxides from Fuel Combustion
  - 11-60.1-39 Storage of Volatile Organic Compounds
- Subchapter 5, Covered Sources
- Subchapter 6, Fees for Covered Sources, Noncovered Sources, and Agricultural Burning
  - 11-60.1-111 Definitions
  - 11-60.1-112 General Fee Provisions for Covered Sources
  - 11-60.1-113 Application Fees for Covered Sources
  - 11-60.1-114 Annual Fees for Covered Sources
  - 11-60.1-115 Basis of Annual Fees for Covered Sources
- Subchapter 8, Standards of Performance for Stationary Sources
- Subchapter 9, Hazardous Air Pollutant Sources

Federal Regulations

NESHAP (National Emission Standards for Hazardous Air Pollutants):

The industrial waste treatment complex is subject to 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants for Source Categories Subparts

- A - General Provisions
- DD - National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations
- PP - National Emission Standards for Containers

NSPS (Standards of Performance for New Stationary Sources):

The combustion turbines are subject to 40 CFR 60 Standards of Performance for New Stationary Sources, Subparts

- A - General Provisions
- GG - Standards of Performance for Stationary Gas Turbines.

Non-Applicable Requirements:

BACT (Best Available Control Technology):

A BACT analysis is required for new or modified sources if the net increase in pollutant emissions exceeds significant levels as defined in HAR §11-60.1-1. This is a renewal for an existing source that retired three boilers, is not adding or modifying emission units, and is not proposing any operational modifications. Therefore, a BACT analysis is not required.

CAM (Compliance Assurance Monitoring):

The purpose of Compliance Assurance Monitoring (CAM) is to provide a reasonable assurance that compliance is being achieved with large emissions units that rely on air pollution control device equipment to meet an emissions limit or standard. Pursuant to 40 Code of Federal Regulations, Part 64, for CAM to be applicable, the emissions unit must: (1) be located at a major source; (2) be subject to an emissions limit or standard; (3) use a control device to achieve compliance; (4) have potential pre-control emissions that are 100% of the major source level; and (5) not otherwise be exempt from CAM. CAM is not applicable because the units are not subject to any emission limits or standards.

CERR (Consolidated Emission Reporting Rule):

40 CFR Part 51, Subpart A – Emission Inventory Reporting Requirements, determines applicability based on the emissions of each pollutant from any individual emission point within the facility that emits at or above the triggering levels. The emissions from each unit do not exceed any of the trigger levels and thus, the facility is not subject to CERR.

MACT (Maximum Achievable Control Technology):

MACT is not applicable because the facility is not a major source of HAPs. Furthermore, MACT standards have not been established for the source category.

NESHAP (National Emission Standards for Hazardous Air Pollutants):

40 CFR Part 63, Subpart YYYY National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines is not applicable to the combustion turbines because the construction occurred prior to January 14, 2003.

NSPS (Standards of Performance for New Stationary Sources):

The fixed roof petroleum storage tanks are insignificant activities and are not subject to 40 CFR 60 New Source Performance Standards (NSPS) Subparts K, Ka and Kb because the true vapor pressure of the fuels stored are less than 3.5 kPa.

NSPS for boilers are not applicable since Subparts D, Da, Db and Dc do not apply to the boilers because the boilers either do not have a high enough heat input or a non-applicable date of construction.

NSR (New Source Review):

NSR is not applicable since the facility is located in an attainment area and PSD applicability has been reviewed.

PSD (Prevention of Significant Deterioration):

Prevention of Significant Deterioration is not applicable to any of the emission units. Since no changes or modifications were proposed to the existing units, a PSD review is not necessary.

Synthetic minor:

A synthetic minor is a facility that without limiting conditions, physical or operational, emits above the major source triggering levels as defined by HAR 11-60.1-1 for either criteria pollutant(s) or hazardous air pollutant(s). The PHNC and this facility are major sources of HAPs and thus, not a synthetic minor.

Insignificant Activities/Exemptions:

The list of Insignificant Activities submitted by the Navy to the DOH in the application is included as Attachment 1.

Project Emissions:
Emissions for the boiler and combustion turbines were estimated using AP-42 sections 1.3, revised 9/98, and 3.1, revised 4/00. An emission rate of 13.47 lb/hr was used to estimate the NO_x emissions from the combustion turbines. That emission rate was the highest recorded result from the 2003 source performance test.

	Emissions (TPY)				
Emission Unit	NO_x	SO_2	CO	PM_{10}	TOC
12.6 Hurst Boiler	7.9	2.8	2.0	0.4	0.2
12.6 Superior Works Boiler	7.9	2.8	2.0	0.4	0.2
2 MW CTs Bldg 149 [1]	8.0	3.9	0.1	0.2	0.1
2 MW CTs Bldg 177 [2]	6.7	3.3	0.1	0.2	0.1
2 MW CT Bldg K-10	2.0	1.0	0.0	0.1	0.0
CERR Trigger	100	100	1,000	100	100

1 - Emissions are for two CTs with a combined fuel consumption limit of 279,000 gallons.
2 - Emissions are for two CTs with a combined fuel consumption limit of 235,000 gallons.

Air Quality Assessment:
The Navy conducted an ambient air quality impact analysis to demonstrate compliance with the state and federal ambient air quality standards. This analysis was not necessary since the facility reduced the number of emission units from the initial CSP application and did not modify the means and methods of the remaining emission units operation. As such, the ambient air quality impact analysis was not reviewed for this renewal. Further, the ambient air quality impact analysis from the initial CSP application remains valid.

The results of the initial analysis show that all the maximum concentrations occur within the boundaries of the PHNC. The analysis also demonstrates that the facility is in compliance with the ambient air quality standards, as none of the concentrations were greater than 75 percent of the standards.

New/Revised Permit Conditions:
Under the current operating permit, the permittee needs to send a written notification to the Department each time the portable boilers relocate within the PHNC. Since the portable boilers are only allowed to locate in pre-approved areas, there is no need to keep up-to-date records of the boilers location. In lieu of submitting a written notification for each relocation, the permittee shall record each relocation in a log book.

Monitoring and testing conditions for the combustion turbines were revised to incorporate the changes to the NSPS Subpart GG. Minor changes were also made to update the "language" of some of the permit conditions. The following are the significant changes that were made.

Attachment IIA

Special Condition B.4.a.

Revised The two (2) 12.6 MMBtu/hr portable boilers may relocate to any of the following locations within the Pearl Harbor Naval Complex provided each change of location is recorded in a log.

Special Condition C.3.

Added Boiler Relocation Log

A relocation log for each boiler shall be maintained. At a minimum, each entry into the log shall include the location and duration for each change of location.

Attachment IIB

Special Condition D.2.

Added

c. The sulfur content of the fuel shall be determined by taking three (3) samples and using ASTM test method D129-00, D2622-98, D1266-98, D5453-00, or D1552-01. The tests shall be performed by the permittee, a service contractor, the fuel supplier, or any other qualified agency.

d. The permittee shall use one of the total sulfur sampling options and the associated sampling frequency described in sections 2.2.3, 2.2.4.1, 2.2.4.2, and 2.2.4.3 of Appendix D to 40 CFR Part 75.

Special Condition E.3.c.

Added All periods of monitor downtime. Monitor downtime begins when a required sample is not taken by its due date, as specified in the methods outlined in Special Condition D.2.d. of Attachment IIB. Monitor downtime also begins on the date and hour of a required sample, if invalid results are obtained. The period of monitor downtime shall include only unit operating hours, and ends on the date and hour of the next valid sample. The attached Monitoring Report Form - *Fuel Certification* shall be used.

Special Condition F.1

Revised The permittee shall annually conduct or cause to be conducted a source performance test to determine emissions of NO_x (as NO_2) from each combustion turbine while operating at 30%, 50%, 75% and 90-to-100% of peak load or at four evenly-spaced load point in the normal operating range of the combustion turbine.

The source performance tests for the emission of NO_x shall be conducted in accordance with the test methods set forth in appendix A of 40 CFR, Part 60. The permittee shall use either:

a. USEPA Method 20;
b. USEPA Method 7E and Method 3 or 3A; or
c. USEPA approved equivalent methods.

The source performance test shall be conducted on an annual basis and at such other times as maybe specified by the Department of Health.

Special Condition F.2

Added For each source performance test, the permittee shall verify the NOx emission limit specified in Special Condition C.3. of Attachment IIB using the method in 40 CFR §60.335(b).

Conclusion and Recommendation:

The applicant has been operating the facility in compliance with the current operating permit. The applicant's past history indicates that the applicant should be able to comply with the new and revised monitoring and recordkeeping requirements.

The issuance of a permit is recommended based on the information submitted by the applicant in the application and the follow-up documents.

ATTACHMENT 1

INSIGNIFICANT ACTIVITIES

ATTACHMENT 2

CALCULATIONS